

# Interstate 80 & Capital City Freeway

State of the Corridor Report  
July 2010



csmp

**CALTRANS DISTRICT 3**

corridor system management plan



District

3



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**Interstate 80/Capitol City Freeway (SR 51) Corridor**  
System Management Plan  
Transportation Network

- I-80 (SR 113 to Sierra College Blvd.) and Capitol City Freeway (SR 51)
- Current HOV Coverage
- CMAA Project
- Highways Outside Corridor
- Other Highways within Corridor
- CSMP Parallel and Connecting Roads
- Express Bus Service
- Light Rail Stations Within Corridor
- Light Rail
- Intercity Rail
- County Lines

Map labels include: Woodland, Davis, West Sacramento, Sacramento, Rocklin, Roseville, Loomis, Folsom, Rancho Cordova, and various roads like Main St, Coville Blvd, Russell Blvd, Richards Blvd, Coville Blvd, Chiles Rd, County Road 32A, Reed Ave, W Capitol Ave, Marconi Ave, Elkhorn Blvd, Wet Ave, Roseville Rd, Roseville Blvd, Auburn Blvd, Madison Ave, Greenback Ln, Antelope Rd, Iverside Ave, Elvert Rd, and Atlantic St. Highway shields for 48, 99, 65, 113, 5, 160, 51, 50, and 16 are shown. A scale bar indicates 0 to 10 miles, and a north arrow is present.

Corridor System Management Plans (CSMP) are comprehensive operations and management plans intended to maintain and enhance corridor mobility through the integrated management of all major transportation modes within the corridor. This includes highways and freeways, parallel and connecting local and regional roadways, public transit and bikeways, along with intelligent transportation technologies, which could include ramp metering, coordinated traffic signals, changeable message signs for traveler information, such as incident management, bus/carpool lanes and car/vanpool programs, and transit strategies. Together, these facilities comprise the CSMP managed network. CSMP success is based on the premise of managing a selected set of transportation components within a designated corridor as a system rather than as independent units. Each CSMP identifies current management strategies, existing travel conditions and mobility challenges, corridor performance management, proposed management strategies, and needed capital improvements.

## Purpose of the State of the Corridor Report

The annual State of the Corridor (SOTC) Report maintains the momentum started by the completion of the first CSMP by reporting on the ongoing implementation of CSMP strategies and movement towards true integrated multimodal corridor system management, as well as anticipated corridor mobility challenges, and impediments to CSMP implementation. It is important to note that the analysis of performance in the first report since the completion of the CSMP is limited to the State Highway System (SHS) only due to the lack of performance data for the non-SHS transportation modes. Future editions of this report will include a more comprehensive report on the performance of the various transportation modes within the corridor, regardless of ownership, as we move toward integrated performance measurement, management and operations

## Proposition 1B Bond Project Status

CSMPs were developed for corridors associated with the Corridor Mobility Improvement Account (CMIA) and Highway 99 Bond Programs, supported by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, Proposition 1B. One project on Interstate 80 (I-80) / State Route (SR) 51 was awarded CMIA funds. The status of the project is as follows:

**I-80 “Fixing the Bottleneck” High Occupancy Vehicle Lanes (HOV) Project:** The remaining two phases of the “Fixing the Bottleneck” HOV and auxiliary lane project in Roseville should be completed by 2011, one year ahead of schedule. Phase 2 of the project consists of constructing both eastbound and westbound HOV and auxiliary lanes from west of the Sacramento/Placer County line to Miners’ Ravine Bridge with bridge widening and ramp modifications and is scheduled for completion in 2010. Phase 3 of this project, which extends the HOV and auxiliary lanes from Miners’ Ravine Bridge to east of the SR 65 interchange and widens Miners’ Ravine Bridge in both directions, is scheduled for completion by 2011.

## Major Corridor Accomplishments

**I-80 “Across the Top” HOV Lanes Project:** The California Transportation Commission approved using \$65 million of CMIA saving for the I-80 “Across the Top” HOV project in May 2010 and construction is anticipated to begin in the Spring of 2011. This project will construct bus/carpool lanes between the Sacramento River Bridge and the Watt Avenue Sacramento Regional Transit (SacRT) light rail station. This project has been identified in the I-80 CMSP as one of the “Key Projects” considered most critical to corridor mobility. The project also includes construction of auxiliary lanes and Traffic Operations Systems in select locations. This is a notable success that will greatly enhance mobility options in the corridor by providing significant travel time advantages to express bus services and carpools serving job centers in downtown Sacramento and the Roseville areas.

**I-80 / Sierra College Boulevard Interchange:** This project modified the existing interchange to correct traffic operational deficiencies by widening the overcrossing and reconstructing all the ramps. The project was completed on schedule in July 2009

**I-80 / SR 65 Interchange Project Study Report (PSR):** The I-80/SR65 PSR was completed in June 2009. The project proposes constructing bi-directional HOV direct connector lanes between I-80 and SR 65, replacing the eastbound to northbound (NB) SR 65 loop-connector with a flyover connector, structure widening of the east Roseville viaduct and possible replacement of the Taylor Road over crossing, and widening the southbound (SB) SR 65 and westbound I-80 to northbound SR 65 connectors. The project will soon be in the Project Approval and Environmental Document stage of development.

**I-80 / Eureka Road On-Ramp Improvements:** The City of Roseville is administering this project, which will result in better functioning of the I-80/ Eureka Road interchange and eliminate backups on the eastbound mainline. Proposed improvements include constructing a fourth travel lane on westbound Eureka Road beginning east of North Sunrise Avenue and extending to the eastbound I-80 on-ramp, modifying the existing intersection striping to include two lanes onto the eastbound I-80 on-ramp, and widening the eastbound Eureka Road off-ramp. The project is currently in the design phase and construction is anticipated to begin in March 2011.

**High Occupancy Toll (HOT) Lanes:** A feasibility study to examine establishing HOT lanes on I-80 between I-5 in Sacramento and SR 65 in Roseville has been completed. The HOT lanes would utilize HOV lanes on I-80. The study assumed that the "Across the Top" HOV and auxiliary lanes project in Sacramento County would be constructed. The study, which was funded by a Caltrans Planning Partnership grant and jointly managed by Caltrans, the Sacramento Area Council of Governments (SACOG), and the Placer County Transportation Planning Agency (PCTPA), concluded that the capital and operations costs to develop and maintain HOT lanes would exceed projected revenue for many years. The study indicated that HOT lanes would have to be subsidized and will not pay for themselves until approximately 2035.

**Sacramento Regional Transit Double Tracking:** Funding has been approved for SacRT to double track the light rail line from downtown Sacramento to the I-80 / Watt Avenue interchange. Construction of this project should be completed by 2012. This project will allow limited stop service from downtown to the Watt/I-80 light rail station.

**ARRA Funded Traffic Operations System Project:** The CSMP notes that a critical component of resolving mobility challenges is the need for detailed data, analysis, and communication regarding system performance. To move toward meeting these needs, work began to install Changeable Message Signs (CMS) and Closed Circuit Television Cameras (CCTV) along I-80. These are financed entirely by the American Recovery and Reinvestment Act of 2009. CCTVs will be installed at the Rocklin Road, Taylor Road and SR 65 interchanges. A CMS will be installed on the west bound Rocklin Road on-ramp.

## Performance Measures

Continuous corridor monitoring and performance measures are an integral part of corridor management and investment decision making to help identify immediate, efficient, and effective system operational strategies and capital improvements. Performance measures provide the important, dynamic daily information needed to rapidly address operational problems caused by recurrent and non-recurrent traffic congestion.

The 2009 CSMP identified performance measures for the SHS, local roadways, and transit to be used as part of the corridor system management process. As noted previously, there is limited or a lack of current performance data for city and county streets, and there is need to develop additional transit and new bicycle performance measures. As such, this Report only includes SHS performance measures. As we continue to strive to establish a multi-modal CSMP, future iterations will include local roadways, transit, and bicycle performance measures.

Table 1 includes the performance measures that were initially identified in the 2009 CSMP and have been updated using 2009 PeMS and Tach Run data. The 2009 CSMP used 2007 data from a number of different sources because of inconsistent and unreliable PeMS coverage. Since the completion of the 2009 CSMP additional detection has been completed offering better PeMS coverage and more reliable data. As a result, we will use this Report and the 2009 performance measures as our baseline to track system performance and future annual "State of the Corridor" reports will include run-charts indicating changes in the performance measures in logical time increments.

**Table 1: Interstate 80 (I-80) and Capital City Freeway (SR 51) CSMP Highway Performance Measures Summary**

County	Location	Post Miles	Distance (Miles)	Average Daily Traffic <sup>1</sup>	LOS <sup>1</sup>	Performance Measures (2008 Data)							Distressed Pavement (lane miles) <sup>4</sup>	2006-2009 Reported Collision Rate Comparison (%) <sup>5</sup>
						Total Vehicle Hours of Delay <sup>2</sup>		Minutes of Delay per Vehicle <sup>2</sup>	Minutes of Delay per Person <sup>2</sup>	Vehicle Travel Time (Minutes) <sup>2</sup>				
						Daily	Peak Hour <sup>3</sup>			Peak Hour <sup>3</sup>	Peak Hour <sup>3</sup>			
STATE HIGHWAY SYSTEM:														
I-80														
SOL	SR 113 North to YOL/SOL County line	42.67/44.72	2.05	115,000	C	9	2	0.02	0.03	1.92	9	60%		
YOL	YOL/SOL County line to Mace Bl. IC	0.00/ 2.68	2.68	125,000	E	157	31	0.23	0.25	2.83	2	58%		
	Mace Bl. IC to U.S. 50 junction	2.68/ 9.55	6.88	145,000	F	2,298	229	0.41	0.46	7.21	1	55%		
	U.S. 50 junction to YOL/SAC County line	9.55/ 11.72	2.17	90,000	D	214	23	0.19	0.21	2.26	3	64%		
SAC	YOL/SAC County line to I-5 junction	0.00/ 2.55	2.55	90,000	D	112	16	0.12	0.13	2.47	4	74%		
	I-5 junction to SR 51	2.55/ 10.99	8.44	149,000	F	1,869	413	3.02	3.32	11.46	18	65%		
	SR 51 to SAC/PLA County line	10.99/18.00	7.01	224,000	F	655	159	0.54	0.66	7.32	18	69%		
PLA	SAC/PLA County line to SR 65 junction	0.00/ 4.16	4.16	165,000	F	968	221	1.12	1.23	5.02	5	69%		
	SR 65 junction to Sierra College Blvd. IC	4.16/ 7.42	3.26	119,000	E	151	21	0.23	0.25	3.49	5	41%		
	TOTAL	--	39.19	--	--	6,433	1,115	5.88	6.54	43.98	65	--		
SR 51														
SAC	U.S. 50/SR 99 jct. to Arden Wy./SR 160 IC	0.00/ 4.35	4.35	163,000	F	2,255	670	5.96	6.76	10.31	2	135%		
	Arden Wy./SR 160 IC to I-80 IC	4.35/ 8.86	4.61	137,000	F	848	219	2.11	2.32	6.62	3	96%		
TOTAL		--	8.86	--	--	3,103	889	8.07	9.08	16.93	5	--		

<sup>1</sup> Source: State Highways-Average Daily Traffic (ADT) and Level of Service (LOS) calculated based on 2008 Caltrans' Traffic Volumes on California Highways and Highway Capacity Manual. LOS calculations based on 2008 Peak Hour Volumes.

<sup>2</sup> Source: Delay is the average additional travel time by vehicles/persons traveling under 60 mph. Data derived from 2009 PeMS's traffic data.

<sup>3</sup> Peak Hour is during PM.

<sup>4</sup> Source: 2008 Caltrans' Division of Maintenance Pavement Summary Report. Distressed pavement is categorized as (1) "Major Structural Distress" which indicates the pavement has severe cracking and is likely to have a poor ride, (2) "Minor Structural Distress", which indicates the pavement has moderate cracking and may have a poor ride, and (3) "Poor Ride Quality (Only)", which indicates the pavement exhibits few cracks but has a poor ride condition. 2009 data not available as of June 3, 2010.

<sup>5</sup> Source: 2006 through 2009 Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) summary data of the percentage above, or below, the statewide average for fatal, injury and property damage-only collisions on comparable facilities.



## Moving Forward

The following key opportunities and challenges should be addressed as we move forward to implement system management within this corridor

**Transit and Bicycle Performance Measures:** The analysis of transit performance was limited to one performance measure – Available Daily/Peak Hour Capacity (%). This measure compares ridership with capacity on a daily and peak hour basis. The intent was to indicate how well transit was performing relative to ridership increases over time. However, the usefulness of this measure has proven questionable, given the likelihood of the routes changes and limited data availability. In addition, the 2009 CSMP did not include bicycle performance measures, though, committed to working with stakeholders to establish them. In an effort to establish additional performance measures for transit and bikes, we will continue to work with our local and regional partners to develop useful performance measures for alternative transportation modes, including performance measures being developed by SACOG as part of the Metropolitan Transportation Plan update process.

**Sacramento Regional Transit Service Cuts:** In response to an estimated \$25 million budget shortfall for Fiscal Year 2011, the SacRT District Board of Directors approved major service reductions to bus, light rail, and paratransit service. Included in this service reduction, is the elimination of all six of the Sacramento Regional Transit District's peak hour time only Express Bus Routes featured in the I-80/SR 51 CSMP. These include Routes 100 (Antelope), 101 (Don Julio), 102 (Hillsdale), 104 (Sunset), 106 (Madison), and 107 (Greenback).

**I-80 / Rocklin Road Interchange Improvements:** The City of Rocklin is administering this project. While the City is still completing some preliminary work, the project has been proposed for inclusion in the Sacramento Area Council of Governments (SACOG) 2011 MTP update. Proposed improvements include constructing one eastbound auxiliary lane on I-80 from east of the SR 65 separation to the Rocklin Road eastbound off-ramp and reconstructing the eastbound and westbound on/off-ramps at Rocklin Road. These improvements are needed to address congestion and safety issues associated with increased traffic due to the growth of the South Placer County region.

**SR 51 Corridor Development Plan:** The Capital City Freeway (SR 51) is a key regional roadway which presents a significant challenge due to the enormous level of traffic it accommodates and its constrained location. For example, one of the many bottlenecks on SR 51 occurs where four northbound lanes drop down to three lanes at the E Street onramp. Furthermore, the proposed significant development at Cal Expo, relocation of the Sacramento Zoo, and other proposed developments in the vicinity of SR 51 will further contribute to unacceptable congestion on SR 51. Accordingly, the Corridor Development Plan is being prepared to identify the most efficient and effective improvement projects, including the feasibility, scope, and cost of HOV lanes, auxiliary lanes, ramp modifications, and other operational improvements. This report is scheduled for completion by June 2011.

**Operational Improvements Projects:** The I-80/SR51 CSMP recognizes that since the construction of California's SHS is virtually completed in the Sacramento region, major emphasis has largely shifted to focused capacity expansions, system maintenance, and operational improvements such as ramp meters, ramp widening, auxiliary lanes, and ramp merge extensions. To address these needs, Caltrans is currently developing PSRs for the high priority operational improvement projects that will be most effective in relieving congestion. Caltrans will seek funding for these projects through all available means, including SACOG regional discretionary programs. These projects include:

- Eastbound I-80, construct three auxiliary lanes from Interstate 5 to Truxel Road – EA 1F130K.

In addition, the following additional operational improvement needs have been identified to optimize system performance. To help facilitate the implementation of these projects, Caltrans will include these projects in our 3 Year PSR Program in anticipation of the pursuit of regional discretionary funding. The feasibility and prioritization of the SR 51 projects will be analyzed more closely within the SR 51 Corridor Development Plan:

- Northbound and southbound SR 51, add auxiliary lanes from Marconi to Watt
- Southbound SR 51, add auxiliary lane from Exposition slip off-ramp to Exposition loop on-ramp
- Northbound SR 51, add auxiliary lane from Arden off-ramp to the SR 160 on-ramp
- Northbound SR 51, add auxiliary from north of J Street to Arden
- Southbound SR 51, add ramp meters and HOV bypass lanes, where feasible, at all on-ramps from H Street to Florin Road (Highway 99)
- Southbound and northbound SR 51, add ramp meters and HOV bypass lanes, where feasible, at all on-ramps from Arden to Watt

**Intelligent Transportation Systems:** Intelligent Transportation Systems (ITS) are a key component of corridor system management. ITS provides an opportunity to improve mobility through the corridor by using low cost strategies to improve overall efficiency without adding capacity. An array of technologies are used to detect and manage transportation activities in the corridor such as Closed Circuit Television System (CCTV), Changeable Message Signs (CMS), Extinguishable Message Signs (EMS), Electronic Tag Readers (ETR), Highway Advisory Radio (HAR), Ramp Meters (RMS), Roadside Weather Information System (RWIS), and Traffic Monitoring Stations (TMS). These elements are typically spaced every ½ mile in the urbanized areas of District 3.

The use of the ITS tools in conjunction with the Regional Transportation Management Center improve efficiency by collecting and disseminating traffic information to the travelling public. This helps reduce delay and improve safety within the corridor. The May 2009 CSMP identified a variety of system management strategies and elements currently being used on the managed network and their locations. The following table shows existing ITS needs for which funding still must be found:

Element	County/PM	Location
<b>Interstate 80</b>		
CCTV	Sac/1.30	W. El Camino Avenue
RMS	Pla/3.95	WB SR 65
RMS	Pla/4.50	EB SR 65
RMS	Pla/6.27	EB Rocklin Road
RMS	Sac/1.20	WB W. El Camino Ave (EB)
RMS	Sac/1.35	WB W. El Camino Ave (WB)
RMS	Sac/10.79	EB Watt Ave @ RT Station
RMS	Sac/16.67	EB Antelope Road
TMS	Pla/5.10	Rocklin Road
<b>State Route 51</b>		
RMS	Sac/0.09	SB 30 <sup>th</sup> /T Street
RMS	Sac/0.59	SB N Street @ 29 <sup>th</sup> Street
RMS	Sac/1.07	SB 29 <sup>th</sup> /H Street
RMS	Sac/2.00	SB Richards Blvd
RMS	Sac/4.07	Arden Way (WB)
RMS	Sac/4.09	NB Route 160
RMS	Sac/4.10	SB Arden Way (EB)
RMS	Sac/4.20	NB Arden Way (EB)
RMS	Sac/4.23	NB Arden Way (WB)
RMS	Sac/5.37	SB Marconi Avenue

The following ITS projects were proposed for inclusion in the 10 Year State Highway Operation and Protection Program (SHOPP). However, it is unlikely that these projects will be programmed through the SHOPP, given limited resources and other higher priority basic maintenance needs. As such, Caltrans will seek funding for these projects through all available means, including regional discretionary funding programs. The projects are listed in priority order.

County/PM	Description	Cost (\$1,000)
Various	RMS and TMS Upgrade	1,700
Various	CCTV Camera System Upgrade	1,400
Various	RWIS Upgrade	1,000
Various	HAR System Upgrade	1,000
Various	Ramp Meter – Priority 1	4,000
Various	Ramp Meter – Priority 2	4,000
Various	Travel Time Infrastructure	1,800
Various	CMS Phase II	6,750
Sacramento	Fiber Optic	1,800
Various	CCTV Cameras – Outlying Area	1,200

**Micro-simulation Modeling:** Since the beginning of the development of the CSMP's, Caltrans has been working in parallel with a consultant team to develop micro-simulation traffic models of select CMSP corridors so that we can better understand at a detailed level how specific operational strategies and capital projects will impact traffic flow. The models include the freeway system, ramps, interchanges and key local roads. The models cover the I-80 corridor from SR 113 in Solano County to Sierra College Blvd in Placer County and the entirety of SR 51. The models will enable Caltrans and its regional partners to test an array of operational and capital project scenarios, to identify groups of strategies and projects for simultaneous or phased implementation, and to prioritize the order of implementation. The models will also enable us to forecast what will happen after projects are implemented, whether new problems will be created, and if so, how to avoid or mitigate those new problems before they occur. The models are nearing completion and are expected to be available for use in Spring 2011. Comprehensive reports for each model are being drafted and will also be available in Spring 2011

